

# MANUFACTURING EXTENSION PARTNERSHIP

## Success Stories from the Field

### Colonial Mills Inc.

#### Rhode Island Manufacturing Extension Services

#### Colonial Mills, Inc. Weaves Lean into Their Supply Chain

##### Client Profile:

Colonial Mills, Inc. (CMI) began in 1977 with five employees and a small line of braided rugs. Today, CMI has 150 employees in their Pawtucket, Rhode Island, facility where the company produces thousands of square feet of braided products per day for national retailers, small furniture and floor covering stores, catalogues, and on-line retailers. The company has worked hard to expand their line and customers' expectations beyond the stereotypical oval braided rug. They have introduced rectangular, square, octagonal, and round rugs, runners, baskets, hampers, bowls, and tote bags, as well as different fiber contents and textures. The rug industry regards CMI as an innovator and design leader and has recognized their efforts by awarding CMI seven major national awards over the years.

##### Situation:

CMI was committed to manufacturing in the USA. The company knew it would be unable to compete with overseas producers solely on price. Their competitive advantage comes from design innovation, quality, and speed of delivery. A number of years ago, CMI delivered products in 30 days. However, as the area rug market grew and became more competitive, retailers and catalogues ratcheted up their demands for faster delivery. CMI knew it was time for a major change and contacted Rhode Island Manufacturing Extension Services (RIMES), a NIST MEP network affiliate, for help.

##### Solution:

RIMES and CMI initially focused on the manufacturing floor and found a number of areas where a few small changes could help the company use resources more efficiently and speed up processes. In the sewing department, for instance, CMI had large, medium, and small sewing tables. The size of the rugs the company was making for a particular order would determine which tables they would use. The medium and large tables were virtually always backlogged, but the four small tables often stood idle because many of the jobs were too big for them. RIMES suggested that they remove the small tables and replace them with three medium tables, which allowed the company to maintain the same square foot production and move four positions to other, more critical roles. CMI then applied Lean principles to how they managed inventory and their supply chain. For years, they had used inventory levels as the primary metric for evaluating efficiency. Lean principles helped them recognize that excess inventory was tying up resources that they could be using elsewhere in the business. First, CMI started using inventory turns, versus dollars held in inventory, as a metric of their performance. The company then took steps to minimize excess inventory, which required that their suppliers make changes as well, so that they could deliver raw materials to CMI on a timely basis. Again, RIMES had experience in this area and advised the company on how to educate their suppliers and work with them more effectively within their new Lean framework. CMI asked one of their largest suppliers to hold inventory and deliver supplies on an as-needed basis. The company also renegotiated a contract with a supplier whom they had used for years, changing the terms so that they no longer had to buy

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excessive amounts of material at a time, but could instead buy in more manageable lots. It took some effort, but getting the company's suppliers in line with their new way of doing business has really paid off.

Using one of CMI's national accounts as a model for a Value Stream Map, they discovered significant time savings in their order entry process. In the past, they would transmit orders, many of them over hundreds of thousands of dollars, via EDI over the weekend. They would then run Manufacturing Resource Planning (MRP) on Sunday night, and on Monday morning, customer service would give the orders to their scheduler. It was often Wednesday before they actually started working on the orders, so they were losing four to five days, holding themselves up. CMI started running MRP daily so they could start working on orders the next morning. Because their orders tended to be so large, they also put them on a Kan Ban system, where they held a certain amount of material specifically for their orders and replenished those stocks as they were used. As a result of these changes, lead times went from four weeks down to three weeks for their largest orders.

Another customer, a national upscale home furnishings retailer, is an example of how CMI's internal improvements completely changed the nature of their relationship with their customers. This customer was part of their custom rug program, and to be honest, CMI dreaded their orders. The problem was that these custom rugs didn't fit any criteria in their order entry system, so CMI would bypass the order entry system and make and ship the rugs before they could correctly enter the orders into the system. Needless to say, these orders would wreak havoc with customer service, production, and shipping. The company adjusted their order entry system to accommodate these custom rugs. CMI's shift to running MRP nightly allowed them to get the orders into the system immediately, instead of losing five days right out of the gate. They also put the account on a pull system. As a result, delivery times for the account have been cut down to three days, and these orders are not a hassle any more.

CMI's second largest customer is a new account and one that they wouldn't have been able to land doing things the "old way." CMI got their business because they wanted lead times between two and seven days, and their competitor wasn't delivering on time. Their orders came in daily, and shipping day was Wednesday. When orders came in as late as Monday, they would still need to ship on Wednesday. With the streamlined system in place, they could deliver. CMI has a 100 percent on-time fill rate with them, and business is growing, providing CMI with increased annual revenue.

CMI's transition to Lean also enabled the company to empower their workers and push decision making down to the people who have the information and experience to make the best decisions. For example, their scheduler used to schedule all of the braiding machines. Each worker ran between nine and twelve braiding machines and each was given a braiding schedule for a week at a time. When a rush job came in, it had to wait for the next week to be put on the schedule, so in some cases, hot jobs sat for five days before even getting onto the schedule. Value Stream Mapping the process highlighted the inefficiencies in their scheduling and pointed the company to solutions that didn't cost a dime—they required only that they think differently. CMI started scheduling only two days at a time, which gave them more flexibility for shifting priorities. They also now have their braiders prioritize jobs, which allows them to run similar jobs together, versus having to do changeovers. Not only do jobs get done faster, the company also has less waste. The workers love having ownership of the process and knowing that their input is valuable. They work off a Kan Ban system, which allows CMI to control inventory better and gives them more flexibility.

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### Results:

- \* Reduced average delivery time from 24 to 25 days down to five days, guaranteeing a 30-day delivery or the product is free.
- \* Reduced return rate from 5 percent to 1.7 percent, with a target of less than 1 percent.
- \* Cut waste from 5 percent to 1.1 percent.
- \* Increased productivity by 15 percent.
- \* Reduced inventory levels by 30 percent.
- \* Increased inventory turns to 12 per year.
- \* Reduced raw materials usage by 20 percent.

### Testimonial:

"For all of these changes to take place, my staff had to have confidence in RIMES. Because their entire team has line-manufacturing backgrounds, RIMES had immediate credibility. My staff could really identify with them. Consultants we've used in the past were not very hands-on and were so theoretical that we struggled to put anything to use. RIMES is very practical and works directly with our staff at all levels; they roll up their sleeves and get their hands dirty, which has earned them the respect of our entire team. We work with RIMES on an ongoing basis, always looking for areas to improve. Our next step will be to work on our administrative processes using Lean Office, which takes the manufacturing methodologies and adapts them for the office. We could even introduce Lean to our sales team in the future. The interesting thing about Lean is that it's applicable to any part of a business, and because RIMES knows our business and Lean inside and out, they are in a great position to support all of our efforts. Even better is that much of their work is funded by state grants, so working with RIMES is very economical. I've found that in our industry, if you're not improving something, you're going backward. Our challenge was, and still is, to get beyond all the daily fires that can consume all of our time. We need that external force to help us continue to move ahead and not get stuck in the day-to-day. RIMES helps us focus on big-ticket items and move forward."

Don Scarlata, President, CEO